REMARKS

In this response, Applicants have amended claims 8 and 13. Support for the additional limitations added to claims 8 and 13 can be found at page 5, lines 35-36 and page 13, lines 26-29 of the specification as originally-filed. Following entry of these amendments, claims 8-10 and 13 are pending in the application.

Claim Objections

Claims 8 and 13 were objected to because the term "the border vicinity" lacks antecedent basis. Claims 8 and 13 have been amended to overcome this objection thereto.

Rejection Under 35 U.S.C. § 102

The Examiner maintains the rejections of claims 8-10 and 13 as being anticipated by JP 07-01346 to Mizuno ("Mizuno"). Applicants respectfully requests reconsideration of the present application in view of the foregoing amendments and the remarks that follow.

Applicants have amended independent claims 8 and 13 to clarify the invention, to specify that the conductive particles have a water repellent characteristic. Specifically, the catalyst layer is formed by closing up conductive particles having a water repellent characteristic adhered together carrying catalysts, and the boundary layer is formed by closing up the conductive particles adhered together to which a hydrophilic treatment is carried out.

In contrast, Mizuno discloses a different arrangement for the catalyst layer and the boundary layer. Specifically, Mizuno discloses that the catalyst layer and boundary layer are both formed by closing up carbon particles as conductive particles and that the carbon particles are made into a paste using NAFIOM, which is a same material used for the membrane of the fuel cell. As such, the carbon particles are inherently granted hydrophilic properties when made into the paste using NAFIOM. That means the conductive particles of the catalyst layer and the boundary layer both have same hydrophilic properties.

In contrast, the conductive particles of the boundary layer háve hydrophilic properties but the conductive particles of the catalyst layer have water repellent properties, in claims 8 and 13. As a result of these arrangement, water can be held inside only the boundary layer, so heat generated in the border vicinity tends to escape to the boundary layer which helps to equalize a temperature distribution of electrolytic membrane.

To the contrary, the conductive particles of Mizuno have the same hydrophilic properties at the catalyst layer and boundary layer. As a result, water in the border vicinity can not be held only to the boundary layer, so the heat lowering activity of the boundary layer will reduce. This makes it difficult to equalize the temperature distribution of the electrolytic membrane.

We believe that Claims 8 and 13 are distinguishable from Mizuno.

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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